

### Analytical Instruments for Science



## UV-VIS SPECTROPHOTOMETER

The T85 is a high performance Double Beam Spectrophotometer available with a fixed (1.8nm) or variable (0.5, 1, 2, 4nm) Bandwidth which is innovative in terms of instrument application, mechanical and optical design, electronic control and software whilst retaining features that are established and accepted through the industrument

The T85 UV-Visible Spectrophotometer is able to carry out photometric measurement, spectrum scans, quantitative determination, multi-wavelength analysis, Kinetic scans and DNA/Protein analysis using the sensitive built in touch screen. When interfaced to a PC using the DPA-Win software, many more features are available including method and data storage, exportation of data in multiple formats and GLP administration features.

The instrument has a spectral range of 190-1100nm. The unique optical design automatically eliminates the error caused by light source and sample changes, while the fully sealed optical structure has all mirrors equipted with Si02 protective coating to avoid stray light caused by dust or corrosive gas.

T85 UV-Visible offers a fixed bandwidth of 1.8nm. T85+ UV-Visible offers a variable bandwidth of 0.5, 1, 2 or 4nm.

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### FEATURES & FUNCTIONS

- High performance fixed or variable bandwidth.
- Si02 coated optical mirrors
- Holographic blazed grating 1200 lines /mm.
- Wavelength accuracy +/- 0.3nm.
- Supplied with a motorised 8 cell changer and pre-aligned Tungsten and Deuterium lamps.
- Sensitive 10inch touch screen offers high degree of automation requiring minimal key depressions to start analysis.
- A number of optional accessories available which increase the flexibility of the analysis.
- Stand alone analysis for photometric measurement, spectrum scans, quantitative determination, Kinetic scans, multi-wavelenth measurement and DNA/Protein analysis.
- DPA-Win software gives additional functionality including compliance with GLP protocol.
- Simple mechanical structure and modular electronics make routine maintenance very easy.

### **OPTICAL SYSTEM & COMPONENTS**

High quality optical components ensure reliable analytical data with low stray light achieved using very low noise electronic circuits.

The double beam optics ensures good optical stability.

Pre-aligned Deuterium and tungsten light sources deliver superior stability across the full wavelength range. Both types of lamps are inexpensive and easy to replace when required.

The modular design allows easy access to all optical surfaces which can be easily cleaned to maintain optimum reflectivity over the lifetime of the instrument.

Suspension designed optical system with all parts independantly fixed on an aluminium deformation free base which is resistant to environmental interferance and vibration.



Sample Compartment with fixed cell holder.

### TOUCH SCREEN FEATURES

The instrument utilises a 10inch smart touch screen with precise touch and a responce time of less than 3ms. The high sensitivity screen has a strong stability and user brightness adjustability for easy reading in all light conditions.

Automatic initialisation: All system parameters are tested when instrument is switched on. The status indicator of each option shows pass or fail.

| Tips: It will cost 20 | -warming                |                        | 20:00        | °C               |
|-----------------------|-------------------------|------------------------|--------------|------------------|
| Ð ·                   | -                       |                        |              |                  |
| File System           | Automotic Sample Holder | Filter                 | WLamp        | D Lamp           |
| 49                    | •                       | ۸.                     | 1            |                  |
| Lamp Conversion       | Detector                | Wavelength Positioning | Dark Current | System Parameter |
|                       |                         | Start                  |              |                  |

Lamp monitoring system: One touch switching on/off of tungsten lamp and Deuterium lamp with real time monitoring. lamp conversion selection can be easily changed between 300nm to 400nm.

| System Settings    |                  |      |      |    |        |   |        |   | 15 | 20 |
|--------------------|------------------|------|------|----|--------|---|--------|---|----|----|
| alanon occurity    |                  |      |      |    |        |   | -      | - | 10 |    |
| Dark Current       |                  |      |      |    |        |   |        |   |    |    |
| WL Calibration     |                  | 🖌 On |      |    |        |   |        |   |    |    |
| Bandwidth          | Wilamp status    | 🗌 of |      |    |        |   |        |   |    |    |
| Time Setting       | Service Time     | 0    | Hour | 0  | Minute | θ | Second |   |    |    |
| Lamp Management    | D Lamp           | 💽 On |      |    |        |   |        |   |    |    |
| General Settings   |                  | of   |      |    |        |   |        |   |    |    |
| File               | Service Time     | 0    | Hour | 0  | Minute | 0 | Second |   |    |    |
| File               | Large Contaction | 2/0  |      |    |        |   |        |   |    |    |
| System information | - and community  | 340. |      | nm |        |   |        |   |    |    |
| $\cap$             |                  |      |      |    |        |   |        |   |    |    |
|                    |                  |      |      |    |        |   |        |   |    |    |

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- Data can be saved in the host or onto a USB memory device
- Data printing by connection of general inkjet or laser printer.
- Data sharing by Excel, Txt data transfer and Windows clipboard.
- Easy switch sample position by automatic motorised 8 cell holder.
- Commonly used concentration units available like: ug/L, mg/L, g/L, ppm and mol/L
- Three levels of scan speeds and six levels of intervals are avialable to optimise the scanning reqirement.



Photometric Analysis



Kinetic Analysis



Multi-wavelength measurement

 Multi-functions like Photometric measurements, Quantitative, Kinetic analysis, Spectral Scanning, Multi-wavelength and DNA/Protein.Data.





Quantitative Analysis



Wavelength Scan





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### **INSTRUMENT ACCESSORIES**

A number of optional accassories are available to extend the application range of the instrument. The following are just some of the available accessories: Automatic 8 - Position Cell Holder, Automatic 5 - Position Variable Cell Holder, Thermostatic Cell Holder, Adjustable Micro Cell Holder, Reflection Accessory, Integrating Sphere, Film Sample Holder and Test Tube Sample Holder.



Automatic 8 Cell Holder.



Automatic 5 Cell Holder.



Film Sample Holder



**Integrating Sphere** 



Test Tube Holder



**Reflectance Accessory** 

### **SPA-WIN SOFTWARE**

DPA-WIN software is a powerful, inintuitive software product used for connectivity to the PG Instruments T65 benchtop UV-Vis Spectrometer. DPA-WIN offers complete instrument control along with data acquisition and a whole host of mathematical tools for interpetation of measurement results. GLP offers extensive administrative capabilities along with a detailed audit trail. the DPA-Win software is seperated into six key workspaces:

- Spectral Analysis
- Photometric AnalysisQuantitative Analysis
- Kinetic Analysis
- Multi-Wavelength Analysis
- DNA-Protein Analysis

#### ADMINISTRATION

DPA-WIN offers all of the features and functions required for use in compliance with the guidance specified in 21CFR part11-Electronic Records.

- Administrive settings can be made where Analysts may require conformity to GLP/GMP.
- Create user groups specifying exactly what actions they are able to perform.
- Add New Users to custom User Groups to determin their privilage settings.
- Automatically log software activity in an Audit Trail.
- Use Password control to ensure Users are logged in for instrument usage.

## Specifications

| Instrument Type             | т85   | T85+                        |  |  |  |
|-----------------------------|---|-----------------------------|--|--|--|
| Optical System              | Double Beam Optics  |                             |  |  |  |
| Optics Scan Speed           | Three levels selectable   |                             |  |  |  |
| Wavelength Range            | 190 nm - 1100nm   |                             |  |  |  |
| Wavelength Accuracy         | ± 0.3nm   |                             |  |  |  |
| Wavelength Reproducibility  | ≤ 0.1nm   |                             |  |  |  |
| Spectral Bandwidth          | 1.8nm   | 0.5, 1.0, 2.0, 4.0nm        |  |  |  |
| Photometric Mode            | Transmittance, Absorbance, Energy and Concentration                     |                             |  |  |  |
| Photometric Range           | -0.3-3.0Abs   |                             |  |  |  |
| Photometric Accuracy        | 0.002A (0-0.5A), 0.004A (0.5-1.0A), 0.2%T)(0 - 200%T                    |                             |  |  |  |
| Photometric Reproducibility | 0.001A (0 - 0.5A), 0.002A (0.5 - 1.0A), 0.1%T(0-200%T)                  |                             |  |  |  |
| Photometric Noise           | 0.0004A (500nm) 30min warm-up   |                             |  |  |  |
| Baseline Flatness           | 0.001A (200 - 1000nm)   |                             |  |  |  |
| Baseline Stability          | 0.0004A/h (500nm, 0Abs), 2hr warm-up                                    |                             |  |  |  |
| Stray light                 | ≤ 0.03%T (220nm Nal, 340nm NaNO₂)                                       |                             |  |  |  |
| Standard Functionality      | Photometric, Quantitative, Spectrum, Kinetic, Multi- Wavelength and DNA |                             |  |  |  |
|                             | Measurem  | ents                        |  |  |  |
| Cell Holder                 | Automatic 8 Cell changer  | std. Other option available |  |  |  |
| Detectors                   | Silicon Photo Diodes  |                             |  |  |  |
| Light Source                | Tungsten Halogen and Deuterium Arc lamps                                |                             |  |  |  |
| Display                     | Digital HD 10inch Touch Screen  |                             |  |  |  |
| Printer                     | Optional Inkjet or Laser Printer  |                             |  |  |  |
| PC Interface                | USB   |                             |  |  |  |
| Software Support            | Local and DPA-Win   |                             |  |  |  |
| Power Supply                | 230VAC 50Hz, 120VAC 60Hz available                                      |                             |  |  |  |
| Weight                      | 28  | Kg                          |  |  |  |
| Dimensions                  | 630mm, 430  | mm, 210mm                   |  |  |  |
| (Width, Depth, Height)      |   |                             |  |  |  |

| Each Unit is supplied with the following as standard: |                        |  |  |  |
|---|------------------------|--|--|--|
| 1 x Qualification book                                | 1 x Power cord         |  |  |  |
| 1 x 8 position 10mm path length motorised cell holder | 1 x Instruction manual |  |  |  |
| 1 Pair 10mm Quartz cells                              | 1 x Dust cover         |  |  |  |
| 4 x 10mm glass cells                                  | 1 x Packing list       |  |  |  |

We reserve the right to modify, revise/upgrade, suspend or discontinue any Product in whole or in part, either temporarily or permanently, with or without notice.





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ALMA PARK, WIBTOFT LEICESTERSHIRE, LE17 5BH UNITED KINGDOM

T: +44 (0)1455 220131 F: +44 (0)1455 220025 www.pginstruments.com